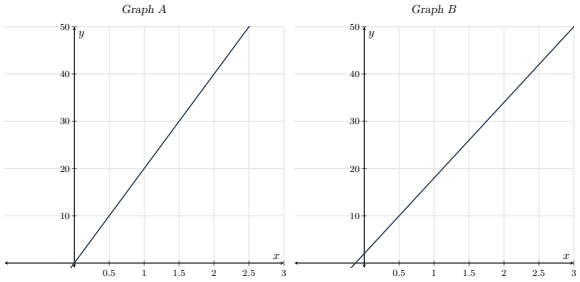
Exercise 1 *You and your friend decide to have a bike race. Your speed is 16 kilometers per hour, and your friend's is 20 kilometers per hour. Your friend is faster than you are, so they give you a head start of 2 kilometers.*

Let $f(x)$ be a linear function expressing the distance (in kilometers) you travel, and $g(x)$ be a linear function expressing the distance (in kilometers) your friend travels.

(a) *One of the following graphs represents $f(x)$ and the other represents $g(x)$.*



The graph representing $f(x)$ is

Multiple Choice:

(i) *Graph A.*
(ii) *Graph B.* ✓

(b) *A linear equation for the distance you travel is* $f(x) = \boxed{16x + 2}$.

(c) *A linear equation for the distance your friend travels is* $g(x) = \boxed{20x}$.

(d) *If the race is 5 kilometers long, who will win?*

Multiple Choice:

(i) *You* ✓
(ii) *Your friend*
(iii) *It will be a tie*

(e) *If the race is 10 kilometers long, who will win?*

Multiple Choice:

(i) *You*
(ii) *Your friend*
(iii) *It will be a tie* ✓

(f) *If the race is 20 kilometers long, who will win?*

Multiple Choice:

(i) *You*
(ii) *Your friend* ✓
(iii) *It will be a tie*